



DENTAL SLEEP PRACTICE

**Population
Sleep Health:
Dentists Providing
Solutions**

by Drs. Michael S. Simmons
and Colin M. Shapiro

Introducing ProSomnus[®] [PH]

Thank you
for Helping Create the First
Precision Herbst-style Device



SUMMER 2019 | dentalsleeppractice.com

AADSM Show Special

\$99

DSP DENTAL SLEEP PRACTICE

**Print & Digital
Subscription**

use code: AADSM99 to save 20%
at www.medmarksubscriptions.com

PLUS

**Continuing Education:
Dental Sleep Medicine:
A Case Study of a TMD
Patient with a 24-year
History of Refractory Epilepsy
Entirely Controlled with a MAD**
by Daniel E. Taché, DMD

Population Sleep Health... Dentists Providing Solutions

by Drs. Michael S. Simmons and Colin M. Shapiro



Population level sleep disorders and sleep deprivation were reported by the Institute of Medicine in 2006 to be an “enormous unmet public health need”¹. Sleep, like nutrition and physical activity, is a critical determinant of health and well-being¹. Now, a dozen years after this landmark report, there is strong indication of further decline in healthy sleep in our communities. Studies indicate inadequate sleep has increased in industrialized populations to between 33-45% of adults^{2,3,4} and poor sleep quality starts as early as 3 years old, due to issues such as screen time⁵. Population level unhealthy sleep has resulted in substantial economic and health costs approaching \$600 billion/year in the U.S. alone as of 2017⁶ and this figure does not include the childhood age group.

The iconic sleep textbook’s opening chapter⁷ states “from today’s vantage point, the greatest challenge for the future is the cost-effective expansion of sleep medicine to provide benefit to the increasing number of patients in society.” While healthy sleep, along with healthy diet and exercise contribute to longevity and quality of life, the general lack of education about healthy sleep continues to be prevalent and most concerning in healthcare providers^{8,9}. Uninformed health providers contribute to poor guidance for the public, who may view snoring as normal, unrestful sleep as unavoidable, and self-imposed sleep deprivation as a badge of honor.

Population based health problems require population-based solutions! One pragmatic answer to resolving population-based sleep health problems is to identify resources and remove barriers that limit access to care. In the case of sleep health there are two main issues at hand: sleep disorders affecting about 1/3 of the population and unhealthy

sleep behaviors affecting a further 1/3 of the population. Many people have both issues: Conservatively 100+ million are affected by unhealthy sleep in the U.S and >12 million in Canada. Identifying sleep disorders is important and the vast majority with sleep disorders fall into three readily diagnosable ICSD-3 categories¹⁰: sleep related breathing disorders (SRBD), insomnia, and circadian rhythm disorders. Identifying poor sleep behaviors is also typically not too challenging and usually respond to sleep hygiene coaching and cognitive behavioral therapy. The rub in all this is the counterproductive bottleneck to diagnosis and the lack of primary care in addressing these simple and readily identifiable presentations of unhealthy sleep.

Early diagnosis and multiple portals of entry into the healthcare system are one obvious answer. The other is population-based education and practice of best sleep health behaviors. Sleep physicians, numbering about 6,000¹¹ hail from a variety of primary specialties and should act in the capacity of quarterbacks, like the cardiologist specialist in cardiovascular health, to address the more complex and challenging presentations. The approximate 850,000 U.S. physicians are typically untrained in sleep disorders¹² and are often overwhelmed with their current practice of problem-based care, hard-pressed to add sleep disorders assessment. Pediatricians, otolaryngologists and mental health providers, who frequently see sleep disorder presentations, could add about 15,000 doctors to the 6,000 sleep physicians but would still leave an enormous healthcare gap with less than 25,000 to manage well over 100,000,000 potential patients. This is where dentists and others in primary care can significantly help to close the gap. Dentists, like family physicians and, in some jurisdictions, nurse practitioners,



It's not just Joe...the whole system's crashing!

physician assistants and chiropractors, are primary health care providers, licensed to diagnose and work unsupervised. In the U.S., dentists number just over 190,000. So if 1/3 of all dentists could engage in providing primary sleep healthcare, it would more than triple the currently available primary sleep health providers. Other primary healthcare providers could also supplement this workforce to increase the number of patients diagnosed with sleep disorders.

This all sounds fine until the process of engaging patients into care is explored. The current bottleneck is in diagnosing SRBD, insomnia or circadian problems as if it is some difficult diagnostic sequence or process. On the contrary, diagnosing the majority of these sleep disorders is most often quite simple with a concerted sleep focused history and, if indicated, sleep testing,¹³ which can be mostly done at home and interpreted remotely by a boarded sleep physician. While screening is sometimes used as a wide net to catch potential sleep disorders, positive results merely indicate the need for a sleep history, associated exam, and potential sleep studies that are required for diagnosis. Some professionals identify sleep disorders as a “medical

The consequences of “mis-diagnosis” are logarithmically shy in population health impact when compared to the currently existing “missed diagnosis.”

problem” outside the scope of practice of dentistry and others opine family physicians would not be interested. The consequences of “mis-diagnosis” are logarithmically shy in population health impact when compared to the currently existing “missed diagnosis.” In this context it should be noted that there was a time when only cardiologists measured blood pressure and while many others now treat cardiovascular disease, cardiologists have become substantially busier.

Diagnostic pathways are rapidly changing with the development of technology, using tools that will be equivalent to and in some ways more appropriate than sleep studies in lab. In her 2017 annual report, the President of the American Academy of Sleep Medicine noted¹¹ that patients “are monitoring and tracking their own sleep in ways we never could have imagined 20 years ago”. Rather than have patients self-diagnose, health professional should be recruited, trained and engaged. The obvious first answer is dentists, who may diagnose and treat other life threatening “medical” disorders such as oral cancer, nicotine addiction, bulimia, and obesity. Dental professionals are highly trained in the anatomy and physiology of the oral cavity and associated structures, preventive and health maintenance therapies, and are an underutilized systemic healthcare provider. While dentists may be pigeonholed to periodontal disease, “TMJ,” and tooth decay, they see more patients annually in health and disease than physicians who are problem-focused.

In the quest for public health solutions to unhealthy sleep, putting the diagnostic territorialism to rest is a worthy compromise. Training of doctor-level healthcare providers such as dentists initially, and then others, will help fill the gap in sleep health. Enabling patients to use quality devices for home recordings dispensed by a dentist, nurse, psychologist or family physician and interpreted by a sleep physician would be infinitely more desirable than allowing patients to self-diagnose and treat using a smart phone app presenting unvalidated data about their sleep. Moreover, the health profession guided process will help identify the more complex sleep disorder cases and get them to the expert sleep physicians / expert sleep dentists in a timely fashion. Currently these sleep experts are overwhelmed with the simple cases and lack availability to focus on the challeng-



Michael Simmons, DMD, MSc, MPH, FAAOP, D-ABDSM, D-ABOP, maintains two California dental practices focusing on Sleep Disorders and Orofacial Pain and has been a longtime Lecturer at UCLA’s dental and medical schools. He’s earned a MSc in sleep medicine from the University of Sydney and an MPH at UCLA with focus on sleep health. Dr. Simmons has authored and published peer reviewed scientific papers and book chapters on Sleep

Disorders and Orofacial Pain. Dr. Simmons is well recognized in the dental and sleep health care provider communities, has served on various state and national sleep society boards as well as being active in his local and state dental societies, advocating for increased dentists’ involvement in sleep health.



Colin Shapiro, BSc, MBBCh, PhD MRCPsych FRCP(C) trained in medicine in South Africa. As a student, he published in Science and in Experientia Journals. He completed medicine and went on to do a PhD in sleep physiology. He’s investigated the use of sleep recordings for diagnostic purposes in psychiatry, and chronobiology in psychiatry and pharmacology. He became the youngest full professor in the department of psychiatry at the University

of Toronto, founded the British Sleep Society and was founding president of the International Neuropsychiatry Association. He has published over a dozen booklets for family physicians, dentists and patients. (www.sleepontario.com) Currently, he is very much involved in the public health aspects of sleep.

ing cases that only they can manage. This is akin to limiting diagnosis and primary care of all patients with hypertension and high cholesterol to cardiologists. Clearly, we would witness in short time a drop off in care for the more challenging cardiomyopathies.

So, in this brave new world, the dentists and other members of the health professions are taught best practices in providing initial diagnosis of SRBD, insomnia and circadian problems along with provision of first line therapy as primary care providers for the simple cases, forwarding the more complex cases to the specialists. The diagnostic and treatment paradigms are developed, tested

More than
1/3
of the population have
insufficient sleep

and upon proof of concept, these paradigms of care are duly instituted. Reimbursement to dentists is through medical billing, similar to other medical/dental crossover health issues such as headache and TMJ disorders that may or may not have medical coverage or have costs below high medical deductibles. When the value of care is recognized by patients, they often pay independent of insurance coverage. This is no different than cosmetic dental and medical care where patients pay out of pocket. In any event, insurance carriers must not discriminate against any healthcare provider diagnosing and delivering primary sleep health care simply to cost contain.

Einstein said "We cannot solve our problems with the same level of thinking that created them". It's time to recognize unhealthy sleep not just as a problem for the individual but rather as a public health problem. In the case of sleep health, dentists can definitely play a big part in the solutions. **DS[®]**

GOT SLEEP?

ASK YOUR DENTIST!

DENTISTS DO SLEEP

BIG 3 SLEEP PROBLEMS

BREATHING PROBLEMS IN SLEEP

- In adults >45% HABITUALLY SNORE (12% children) **45%**
- In adults 25% HAVE SLEEP APNEA (3% children) **25%**
- 23% of COUPLES SLEEP SEPARATELY DUE TO SNORING **23%**

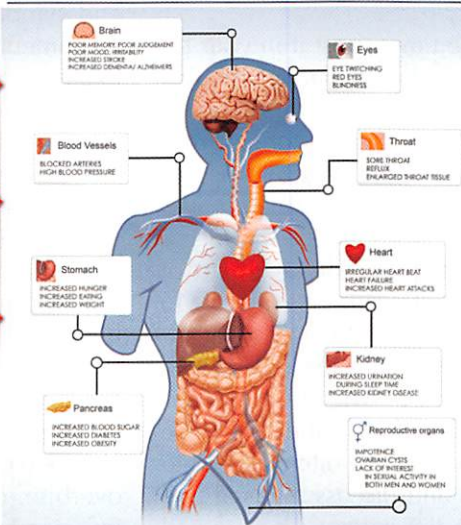
CAN'T SLEEP INSOMNIA AND CIRCADIAN SLEEP TIMING PROBLEMS

- ABOUT 20% ARE AFFECTED BY INSOMNIA (difficulty falling asleep, staying asleep or waking early) **20%**
- ALTERED SLEEP TIMING (CIRCADIAN) CAUSE ABOUT 10% TO BE SLEEPY AT WRONG TIMES **10%**

MOVEMENT PROBLEMS IN SLEEP

- MOVING BODY LIMBS OR JAW DURING SLEEP (8% of adults) **8%**
- OTHER SLEEP DISORDERS are much less frequent such as Narcolepsy 0.04% adults **0.04%**

POOR SLEEP CAN DAMAGE YOUR BODY SHORTEN YOUR LIFETIME



BIGGEST SLEEP HEALTH PROBLEM?

Insufficient Sleep!
Get Healthy Sleep... For a Healthy Life

SCARY SLEEP FACTS

- 5% of children with ADHD have sleep apnea. This increases their risk of insufficient sleep during the week with between time 3-5% less.
- 25% of car crashes are related to drowsiness. Billions of miles are driven yearly in the U.S. with sleeping or sleepy driver.
- Over 1/3 of the population with sleep disorders. Over 1/3 of the population has insufficient sleep.
- Unhealthy sleep costs the U.S. economy about \$80 billion/year. Under 8 hrs of sleep has a 1% increase in death rate vs. 7.8 hrs. Insufficient sleep leads to increased errors and injuries.

Healthy Sleep Practices

RECOMMENDED HOURS OF SLEEP / 24 HRS

AGE	SLEEP HOURS
3-12 MONTHS	12-16 HOURS
1-2 YEARS	11-14 HOURS
3-5 YEARS	10-13 HOURS
6-12 YEARS	9-12 HOURS
13-18 YEARS	8-10 HOURS
ADULTS (ALL AGES)	7-9 HOURS

Short sleep < 6 hours is **BAD**.
Long sleep > 10 hours is **WORSE**.

SO YOU CAN LOOK GOOD AND FEEL GOOD

1. Consistent bed time / wake time EVERY day. Have a wind down time.
2. Develop a strong association of the BED with SLEEP (not with TV, eating, etc).
3. Keep bedroom dark, quiet, relaxing, safe and at a cool temperature.
4. Get some exercise during wake time to help fall asleep more easily.

DON'T (s)

- A. No electronic device activity. TV's, computers, smart phones in bedroom.
- B. Avoid big meals, caffeine, alcohol or doing heavy exercise in the 3+ hours before sleep.
- C. No over stimulation, bright lights, computer or screen use in the 2 hours before sleep.
- D. Stay in bed for 20 minutes & if not asleep... leave the bedroom and do something relaxing until sleepy. Then return to bed.

Go to www.DentistsDoSleep.com for more information and support documents

1. Institute of Medicine (US) Committee on Sleep Medicine and Research. Sleep Disorders and Sleep Deprivation: An Unmet Public Health Problem. (Colten HR, Altevogt BM, eds. Washington (DC): National Academies Press; 2006. <http://www.ncbi.nlm.nih.gov/books/NBK19960/>.
2. Adams RJ, Appleton SL, Taylor AW, et al. Sleep health of Australian adults in 2016: results of the 2016 Sleep Health Foundation national survey. Sleep Health. 2017;3(1):35-42. doi:10.1016/j.sleh.2016.11.005
3. St-Onge M-P, Grandner MA, Brown D, et al. Sleep Duration and Quality: Impact on Lifestyle Behaviors and Cardiometabolic Health: A Scientific Statement From the American Heart Association. Circulation. 2016;134(18):e367-e386.
4. Kronholm E, Partonen T, Härmä M, et al. Prevalence of insomnia-related symptoms continues to increase in the Finnish working-age population. J Sleep Res. 2016;25(4):454-457. doi:10.1111/jsr.12398
5. Genuneit J, Brockmann PE, Schlarb AA, Rothenbacher D. Media consumption and sleep quality in early childhood: results from the Ulm SPATZ Health Study. Sleep Medicine. 2018;45:7-10. doi:10.1016/j.sleep.2017.10.013
6. Hillman D, Mitchell S, Streatfield J, Burns C, Bruck D, Pezzullo L. The economic cost of inadequate sleep. Sleep. doi:10.1093/sleep/zsy083
7. Pelayo R, Dement W. The history of Sleep Physiology and Medicine Chapter 1 in Principles and Practice of Sleep Medicine 6th Edition 2016
8. Mindell JA, Bartle A, et al. Sleep education in medical school curriculum: a glimpse across countries. Sleep Med. 2011;12(9):928-931.
9. Simmons MS, Pullinger A. Education in sleep disorders in US dental schools' DDS programs. Sleep Breath. 2012;16(2):383-392. doi:10.1007/s11325-011-0507-z
10. American Academy of Sleep Medicine. International Classification of Sleep Disorders, 3rd ed. Darien, IL: American Academy of Sleep Medicine; 2014
11. <https://aasm.org/resources/pdf/rosen-president-report-2017.pdf>
12. Mukherjee S, Patel SR, Kales SN, et al. An Official American Thoracic Society Statement: The Importance of Healthy Sleep. Recommendations and Future Priorities. Am J Respir Crit Care Med. 2015;191(12):1450-1458.
13. Magalang UJ, Johns JN, et al Home sleep apnea testing: comparison of manual and automated scoring across international sleep centers. Sleep Breath. 2018 Sep 10. doi: 10.1007/s11325-018-1715-6.